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The Effects of a Standardized Patient Education Program on Self-Management Outcomes in Patients with HIV

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Standardized Education and HIV Self-Management Outcomes
A Pilot Study

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Capstone Presentation

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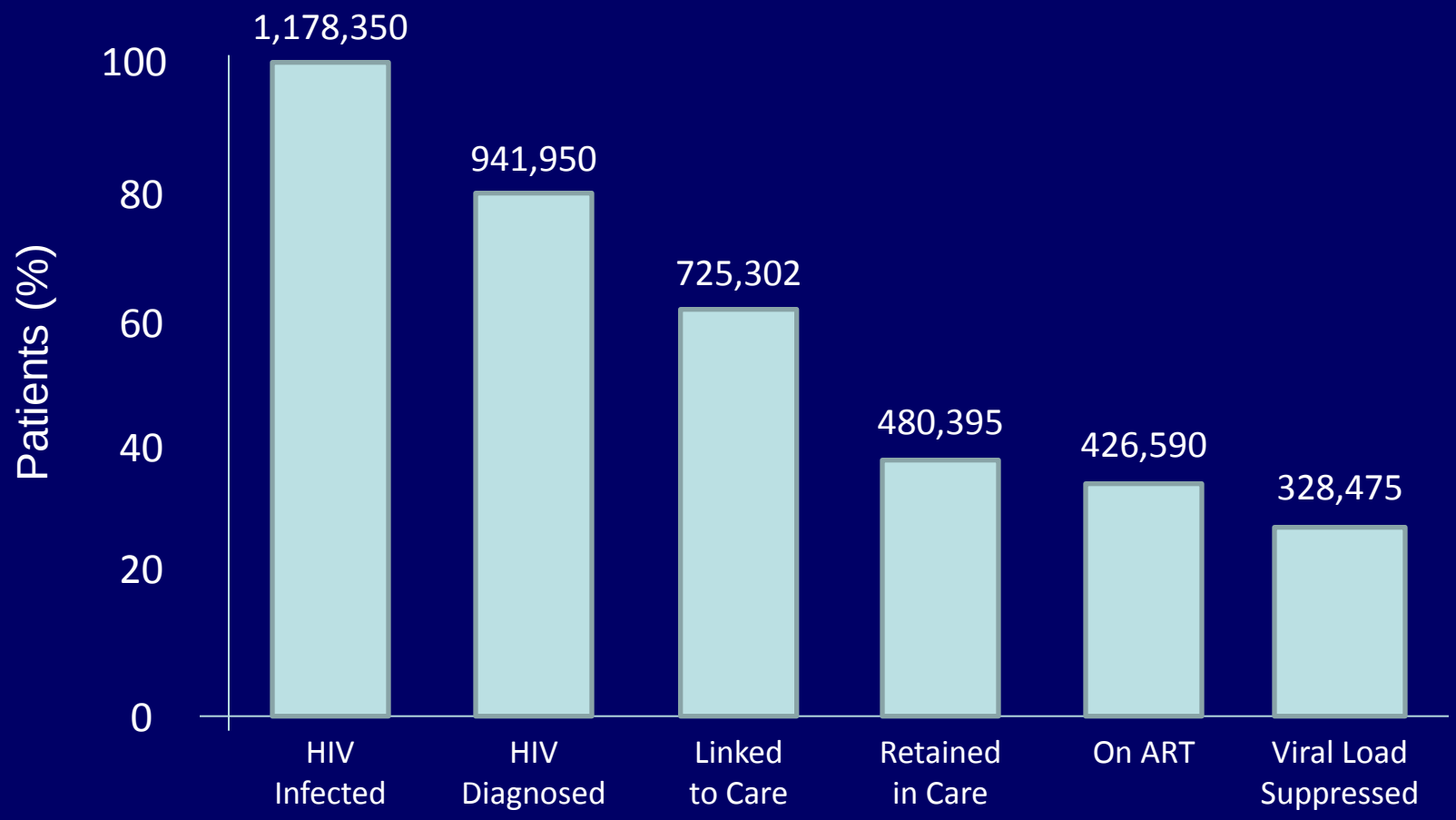
Background

- HIV has increasingly become recognized as a chronic disease with advances in treatment
- To receive benefits of current HIV treatments, patients must be adherent to care
  - Three main components
    - Medication compliance, attendance at provider appointments, completion of laboratory work
    - Each has been associated with a decrease in HIV-related morbidity, mortality and healthcare costs

Giordano TP, et al. Clin Infect Dis,44,1493-9, 2007.
Paterson DL, et al. Ann Intern Med,133, 21-30, 2000.
Valenti WM. AIDS Read,11, 77-80, 2001.

Background

Number of US patients engaged in the continuum of HIV Care



Cohen SM. MMWR 60, 1618-23, 2011.

Background

Potential Barriers to HIV Care

- Barriers for entry into care
  - Finances
  - Transportation
  - Substance abuse
  - Fear of people knowing and stigma
  - Fear of HIV medication side effects
  - HIV knowledge
- Barriers to adherence to care (retention)
  - Not well defined

Seekins D. International AIDS Conference. Vienna, Austria, 2010.

Rationale

- HIV management is life-long and any strategy for improving adherence must be sustainable
- HIV self-management programs can improve adherence to care
  - The Positive Self-Management Program (PSMP)
    - Improved adherence through patient empowerment
    - Time intensive and impractical (14 hours over seven weeks)
- There is a need for a brief but thorough program that can be delivered within the confines of one clinic visit

Gifford AL, et al. J Acquir Immune Defic Syndr, 31(Suppl3), S163–6, 2002.
Swendeman D, et al. AIDS Care, 21, 1321-1334, 2009.

Research Question and Objectives

- Can a short, standardized HIV education program delivered during a provider visit improve patient self-management of HIV measured by adherence to care as well as increase patient knowledge of their disease state?

- Primary objective: To evaluate how a brief, standardized education program impacts patient adherence to medications, completion of lab work, and attendance at office visits

- Secondary objective: To examine how a patient's knowledge of his or her disease state changes over the course of the study compared with baseline

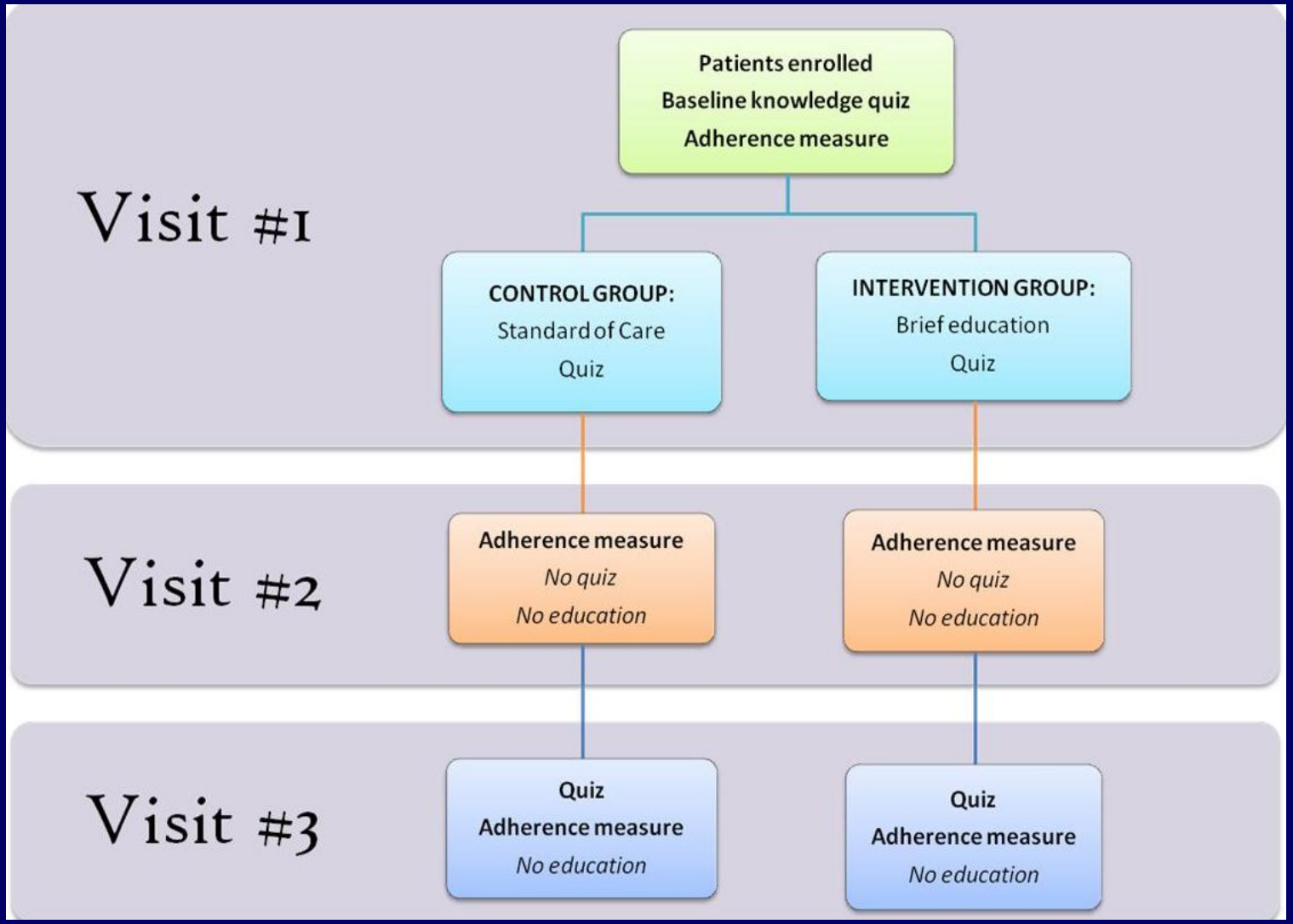
Methods

- Pilot Study
  - This program was initially implemented as a pilot study to a sample of patients
  - The completed pilot will be used to determine:
    - If enrollment should be expanded beyond the pilot to achieve statistical power
    - If the program should be targeted to certain clinic patients that might receive the greatest benefit from participating

Methods

- Subjects are randomized to a standard visit (control) or a standard visit plus a 10 minute scripted educational session (intervention)
- Baseline knowledge and adherence are measured using validated tools
- The intervention is an educational presentation by the investigator using an illustrated booklet
- Participants receiving education retake the quiz following the intervention to assess learning
- Adherence is followed over the next 2 scheduled interactions. All participants repeat the initial quiz during the final visit to assess change in knowledge

Methods


Visit #1
Patients enrolled
Baseline knowledge quiz
Adherence measure
CONTROL GROUP:
Standard of Care
Quiz
INTERVENTION GROUP:
Brief education
Quiz
Visit #2
Adherence measure
No quiz
No education
Adherence measure
No quiz
No education
Visit #3
Quiz
Adherence measure
No education
Quiz
Adherence measure
No education

Baseline and Post-Intervention Data Analysis

- Enrollment of the pilot study population has been completed (n=45) and a baseline data analysis performed
- T-tests and Chi-square tests were used to detect differences in baseline characteristics between groups
- Testing was also performed to identify characteristics potentially associated with perfect baseline adherence
- Post-interventional analyses were performed to evaluate:
  - Changes in HIV knowledge from baseline for the intervention group
  - Changes in adherence to care for the intervention and control groups

Baseline Data Analysis

Demographics and Baseline Characteristics

Variables	Intervention (n=24)	Control (n=21)	P-value
Demographics			
Male gender	18 (75%)	16 (76%)	0.138
African American	19 (79%)	12 (58%)	0.256
Mean age (years)	47	47	1.000
Mean time since HIV diagnosis (yrs)	9.75	10.75	0.108
Mean time in the practice (yrs)	5.5	6	0.574
Mean CD4 count (cells/mm^3)	484	471	0.195
Mean nadir CD4 count (cells/mm^3)	186	98	0.013
Current viral load detectable	9 (38%)	7 (33%)	0.771
Mean number of comorbid conditions	1.9	2.1	0.706
Mean number of other meds	2.8	2.5	0.961
ART History			
Mean duration of current regimen (yrs)	2.9	4.1	0.327
Multiple tablets in current regimen	15 (63%)	16 (76%)	0.322
Previous ART failure	9 (38%)	3 (15%)	0.079
Has received >1 ART regimen	10 (42%)	11 (52%)	0.472
Baseline Adherence			
Perfect overall adherence	7 (29%)	7 (33%)	0.763
Perfect medication adherence	20 (83%)	14 (67%)	0.194
Perfect appointment adherence	8 (33%)	10 (48%)	0.329
Perfect laboratory adherence	9 (38%)	10 (48%)	0.493
Baseline Knowledge of HIV Infection			
Perfect HIV knowledge	5 (25%)	9 (48%)	0.114

Baseline Data Analysis

Assessment of Patient Characteristics for Possible Associations with Adherence to Care at Baseline

Variables	Entire Study Population (n = 45)		P-value
	Perfect Adherence	Non-Perfect Adherence	
Demographics			
Male gender	12	22	0.287
African American	7	24	0.047
Mean age (years)	50	46	0.891
Mean time since HIV diagnosis (yrs)	8.2	11.1	0.841
Mean time in the practice (yrs)	5.8	5.6	0.606
Mean CD4 count (cells/mm^3)	568	437	0.880
Mean nadir CD4 count (cells/mm^3)	217	113	0.003
Current viral load detectable	5	9	0.998
Mean number of comorbidities	2	2	1.000
Mean number of other meds	2.5	2.75	0.865
ART History			
Mean duration of current regimen	4.5	3	0.477
Multiple tabs in current regimen	4	10	0.195
Previous ART failure	2	12	0.198
Has received >1 ART regimen	5	9	0.322
Baseline Knowledge of HIV Infection			
Non-perfect HIV knowledge	8	23	0.042

Post-Intervention Analysis

Post-Intervention Knowledge and Adherence at Study Visit Two

- Post-intervention knowledge

Variables	Baseline	Post Intervention	P-value
Knowledge in the Intervention Group (n = 24)			
Perfect HIV Knowledge	5 (25%)	16 (67%)	0.002

- Adherence at study visit two

Variables	Intervention (n=24)	Control (n=21)	P-value
Adherence at Visit Two			
Perfect overall adherence	17 (67%)	5 (24%)	0.002
Perfect medication adherence	19 (83%)	12 (67%)	0.111
Perfect appointment adherence	19 (33%)	11 (48%)	0.057
Perfect laboratory adherence	20 (38%)	11 (48%)	0.025

Post-Intervention Analysis

A Closer Look at Adherence at Baseline and Study Visit Two

- Baseline adherence

Variables	Intervention (n=24)	Control (n=21)	P-value
Baseline Adherence			
Perfect overall adherence	7 (29%)	7 (33%)	0.763
Perfect medication adherence	20 (83%)	14 (67%)	0.194
Perfect appointment adherence	8 (33%)	10 (48%)	0.329
Perfect laboratory adherence	9 (38%)	10 (48%)	0.493

- Adherence at study visit two

Variables	Intervention (n=24)	Control (n=21)	P-value
Adherence at Visit Two			
Perfect overall adherence	17 (71%)	5 (24%)	0.002
Perfect medication adherence	19 (79%)	12 (57%)	0.111
Perfect appointment adherence	19 (79%)	11 (52%)	0.057
Perfect laboratory adherence	20 (83%)	11 (52%)	0.025

Summary and Future Directions

- Adherence to care improves outcomes for patients with HIV infection
  - Less than 50% of HIV patients in the US have consistent care
- Determinants of adherence to care are numerous and patient specific
  - Basic knowledge of HIV infection may be influential
- Initiatives to improve adherence and knowledge are often cumbersome and impractical
  - An efficient but thorough program delivered during a clinic visit that can improve adherence to care is needed

Summary and Future Directions

- Preliminary results from this pilot study have identified HIV knowledge as a factor possibly linked to adherence
- The delivery of a brief education session during a standard of care clinic visit may have improved:
  - HIV knowledge in the short term
  - Adherence to care at a subsequent visit
- Questions remain:
  - Does improving HIV knowledge truly impact adherence to care?
  - Can this intervention lead to long term HIV knowledge retention?
  - Will this intervention lead to long term retention in HIV care?

Summary and Future Directions

- Study completion and final analysis
  - 15/45 have completed the final study visit
  - Upon completion, statistical testing will evaluate the overall impact of the intervention
- Results will be presented to clinic physicians and staff
- Investigators and clinic physicians will determine the utility of expanding enrollment beyond the pilot study to achieve statistical power

References

1. Cohen SM et al. Vital Signs: HIV prevention through care and treatment – United States. MMWR, 60, November 29, 2011
2. Giordano TP, Gifford AL, White AC, et al. (2007). Retention in care: a challenge to survival with HIV infection. Clin Infect Dis,44,1493-9.
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5. Seekins D, Scibelli A, Juday T, Stryker R, Das A. Barriers to accessing HIV testing, care, and treatment in the United States. Presented at XVIII International AIDS Conference. Vienna, Austria, 18–23 July 2010.
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7. Valenti WM. (2001). Treatment adherence improves outcomes and manages costs. AIDS Read, 11(2), 77-80.